

MENU

SEARCH

INDEX

JAPANESE

LEGAL  
STATUS

1 / 1

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : **01-190098**  
 (43)Date of publication of  
 application : **31.07.1989**

(51)Int.Cl. **H04R 17/00**

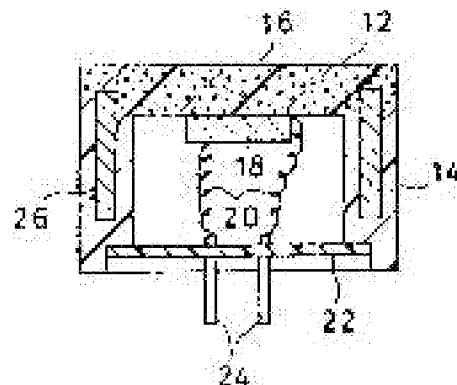
(21)Application number : **63-014214** (71) **MURATA MFG CO LTD**  
 Applicant :  
 (22)Date of filing : **25.01.1988** (72)Inventor : **INOUE JIRO**  
**MAKINO SHIRO**

### (54) AERIAL ULTRASONIC TRANSDUCER

#### (57)Abstract:

**PURPOSE:** To ease the difference between the thermal expansion coefficient of an acoustic matching layer and/or that of a resin case and to minimize characteristic deterioration due to the change of an environmental temperature by providing a member having the thermal expansion coefficient between that of the acoustic matching layer and that of the piezoelectric element in a body with at least one out of the acoustic matching layer and the resin case.

**CONSTITUTION:** An aerial ultrasonic transducer 10 includes an acoustic matching layer 12 and a case 14, which are resin molded in a body, in this example. A piezoelectric element 18 having a disk shape or a ring shape is adhered onto the inner surface of the acoustic matching layer 12. A tubulous body 26 is arranged over the acoustic matching layer 12 and the case 14. The



tubulous body 26 is a cylindrical body formed with a material having the thermal expansion coefficient between that of the acoustic matching layer 12 and that of the piezoelectric element 18, and the tubulous body 26 can be inserted in a body with the acoustic matching layer 12 and the case 14 by using resin molding technique to fill the resin in a die after the tubulous body 26 is previously positioned in the die. The difference between the thermal expansion coefficient of the acoustic matching layer 12 and that of the piezoelectric element 18 and the difference between the thermal expansion coefficient of the case 14 and that of the piezoelectric element 18 can be eased by the thermal expansion coefficient of the tubulous body 26.